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D4146-1

Job Sheet 184684



10005 10215  
ship Nov 2

Part No: D4146-1

Job Qty: 12 ea

Part Name: Fitting



ASAP

Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 10/16/18

Job Tracking No:

Created By: Marie Lajeunesse

Due Date: 10/26/18

Description:

Note: DWG REV A IPP REV:A NEW ISSUE 10-10-05 JLM VERIFIED BY:DD

Ship Via:

Ch  
th  
128

### Bill of Materials

### Job Routing

| Op No | Operation          | Qty    | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off |
|-------|--------------------|--------|------------|----------|-----------|---------|-----------------------|-----------|----------|
|       |                    |        |            |          | Setup Hrs | Run Hrs | Workcenter / Supplier | Lead Time |          |
| 90    | Start up Operation | 12 Ea  |            | 10/26/18 | 0.00      | 0.00    | Start Up Machining-2  |           |          |
| 100   | Doosan             | 12 pcs |            | 10/26/18 | 0.27      | 4.80    | Doosan                |           |          |
| 120   | QC                 | 12 pcs |            | 10/26/18 | 0.00      | 0.00    | QC8                   |           |          |
| 130   | Packaging          | 12 pcs |            | 10/26/18 | 0.00      | 0.00    | Packaging3-2          |           |          |
| 140   | QC21-SA            | 12 Ea  |            | 10/26/18 | 0.00      | 0.00    | QC21                  |           |          |

OCT 29 2018 468  
OCT 30 2018 69-89  
OCT 30 2018  
21  
9-89

### Job BOM

| Part / Item          | Component Name     | Quantity                        | Operation             | Container |
|----------------------|--------------------|---------------------------------|-----------------------|-----------|
| M303R1.000<br>R1.250 | 303 Round Bar 1.00 | 1.9992 ft (1.666 ea)<br>1.69 ea | 90-Start up Operation | 5100769   |

90 3/4  
1.69  
8

### Job Allocations

| Operation             | Component Part      | Required | Inventory | Allocated |
|-----------------------|---------------------|----------|-----------|-----------|
| 90-Start up Operation | M303R1.000<br>1.250 | 2        | 40        | 0         |

### Part Specifications

| Spec No | Description | Target/Tolerance               | Limits         | Type     | Special Comments |
|---------|-------------|--------------------------------|----------------|----------|------------------|
| 1       | Fitting     | 0.290Inches + 0.006<br>- 0.001 | 0.296<br>0.289 | Diameter | 293              |
| 2       | Fitting     | 0.810Inches ± 0.010            | 0.820<br>0.800 |          | 819              |
| 3       | Fitting     | 0.550Inches ± 0.010            | 0.560<br>0.540 | Diameter | .559             |
| 4       | Fitting     | 0.470Inches ± 0.010            | 0.480<br>0.460 | Diameter | .470             |
| 5       | Fitting     | 0.330Inches ± 0.010            | 0.340<br>0.320 | Diameter | 340              |
| 6       | Fitting     | 0.063Inches ± 0.010            | 0.073<br>0.053 |          | .062             |
| 7       | Fitting     | 1.790Inches ± 0.030            | 1.820<br>1.760 |          | 1.79             |
| 8       | Fitting     | 1.700Inches ± 0.030            | 1.730<br>1.670 |          | 1.706            |

T9 - .0065



DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Cross tube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                              |  |
| Date : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Step #: _____                                                                                                                                                                      | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | MRB (QSI042) Approval                        |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                    | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | Completed By                                 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | Lead hand / Supervisor Approval Verification |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | QC / QA Coordinator Approval                 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                              |  |
| <b>Root Cause</b><br><div style="display: flex; justify-content: space-between;"> <div>             Environment <input type="checkbox"/><br/>             Design <input type="checkbox"/><br/>             Doc/Data <input type="checkbox"/><br/>             Equip/Tooling <input type="checkbox"/><br/>             Handling/Pre <input type="checkbox"/><br/>             Material <input type="checkbox"/><br/>             Internal Transport <input type="checkbox"/><br/>             Tribal Knowledge <input type="checkbox"/><br/>             LOA <input type="checkbox"/><br/>             Substation <input type="checkbox"/><br/>             Past Expiry Date <input type="checkbox"/><br/>             Misidentified <input type="checkbox"/> </div> <div>             No Re-verification <input type="checkbox"/><br/>             Operator <input type="checkbox"/><br/>             Offset/Setup <input type="checkbox"/><br/>             Supplier <input type="checkbox"/><br/>             Training <input type="checkbox"/><br/>             Use for Testing <input type="checkbox"/><br/>             Poor Information <input type="checkbox"/><br/>             Rushing <input type="checkbox"/><br/>             Product Improvement <input type="checkbox"/><br/>             Process Improvement <input type="checkbox"/><br/>             Manufacturing Process <input type="checkbox"/><br/>             Past Due <input type="checkbox"/> </div> <div>             Pressure/Forced <input type="checkbox"/><br/>             Bending <input type="checkbox"/><br/>             Centre Not Concentric <input type="checkbox"/><br/>             Cracks <input type="checkbox"/><br/>             Crimp/Kink/Ripple/Wave <input type="checkbox"/><br/>             Cuffs <input type="checkbox"/><br/>             Crushing <input type="checkbox"/><br/>             Heat Treat <input type="checkbox"/><br/>             Wave/Twist in Tube <input type="checkbox"/><br/>             Marks/Chatter <input type="checkbox"/> </div> </div> |                                                                                                                                                                                    | <b>FAULT CATEGORY</b><br><div style="display: flex; justify-content: space-between;"> <div>             Temperature/Cure <input type="checkbox"/><br/>             Set-up <input type="checkbox"/><br/>             BOM/Route <input type="checkbox"/><br/>             Broken/Damage/Defect <input type="checkbox"/><br/>             Inspection Incomplete/Unqualified <input type="checkbox"/><br/>             Contamination <input type="checkbox"/><br/>             Countersink <input type="checkbox"/><br/>             Cut Too Short <input type="checkbox"/><br/>             Instructions Incomplete/Unclear <input type="checkbox"/><br/>             Drill Holes <input type="checkbox"/> </div> <div>             Power Loss/Surge <input type="checkbox"/><br/>             Folio/Program <input type="checkbox"/><br/>             Grain <input type="checkbox"/><br/>             Weld <input type="checkbox"/><br/>             Wrong Stock Pulled <input type="checkbox"/><br/>             Out of Sequence <input type="checkbox"/><br/>             Off-set <input type="checkbox"/><br/>             Misabeled <input type="checkbox"/><br/>             Fit/Function <input type="checkbox"/><br/>             Misaligned/off center <input type="checkbox"/> </div> <div>             Positioned Wrong <input type="checkbox"/><br/>             Outside Dimensions <input type="checkbox"/><br/>             Over/Under tolerance <input type="checkbox"/><br/>             Part Incorrect <input type="checkbox"/><br/>             Part Lost/Missing <input type="checkbox"/><br/>             Part Moved <input type="checkbox"/><br/>             Drawing <input type="checkbox"/><br/>             Finish <input type="checkbox"/><br/>             Misread <input type="checkbox"/><br/>             Turning Sequence <input type="checkbox"/> </div> </div> |  |                                              |  |
| OTHER : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                              |  |

|    |         |                         |                |               |
|----|---------|-------------------------|----------------|---------------|
| 9  | Fitting | 1.590Inches $\pm$ 0.030 | 1.620<br>1.560 | 1.597         |
| 10 | Fitting | 1.190Inches $\pm$ 0.030 | 1.220<br>1.160 | 1.197         |
| 11 | Fitting | 0.840Inches $\pm$ 0.030 | 0.870<br>0.810 | .843          |
| 12 | Fitting | 0.810Inches $\pm$ 0.030 | 0.840<br>0.780 | .813          |
| 13 | Fitting | 0.500Inches $\pm$ 0.030 | 0.530<br>0.470 | .50           |
| 14 | Fitting | 0.539Inches $\pm$ 0.010 | 0.549<br>0.529 | Diameter .537 |

Plex 10/16/18 8:14 AM Dart.lajeunesse.marie



DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                               |                                        |                                     |                                              |                                      |  |
|--------------------------------------------------------------|-----------------------------------------------|----------------------------------------|-------------------------------------|----------------------------------------------|--------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b>                            |                                        | <b>AGAINST DEPARTMENT/PROCESS</b>   |                                              |                                      |  |
|                                                              | Rework <input type="checkbox"/>               | Skid-tube <input type="checkbox"/>     | Cross tube <input type="checkbox"/> | Water Jet <input type="checkbox"/>           | Engineering <input type="checkbox"/> |  |
|                                                              | Scrap <input type="checkbox"/>                | Machining <input type="checkbox"/>     | Small Fab <input type="checkbox"/>  | Prod. Eng. Coord. <input type="checkbox"/>   | Quality <input type="checkbox"/>     |  |
|                                                              | Use-as-is <input type="checkbox"/>            | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/>  | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/>       |  |
|                                                              | Suspected Unapproved <input type="checkbox"/> | Large Fab <input type="checkbox"/>     | Composite <input type="checkbox"/>  | Supplier <input type="checkbox"/>            |                                      |  |
| Date : _____                                                 | Step #: _____                                 | QTY Effective : _____                  |                                     |                                              | MRB (QSI042) Approval                |  |

|                                                             |                    |                                                     |
|-------------------------------------------------------------|--------------------|-----------------------------------------------------|
| <b>Description Work Order Deviation</b>                     | <b>Disposition</b> | <b>Completed By</b>                                 |
| <div style="height: 150px; border: 1px solid black;"></div> |                    | _____                                               |
|                                                             |                    | <b>Lead hand / Supervisor Approval Verification</b> |

| Root Cause                                  |                                                |                                                 |
|---------------------------------------------|------------------------------------------------|-------------------------------------------------|
| Environment <input type="checkbox"/>        | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>        |
| Design <input type="checkbox"/>             | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                |
| Doc/Data <input type="checkbox"/>           | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>  |
| Equip/Tooling <input type="checkbox"/>      | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                 |
| Handling/Pre <input type="checkbox"/>       | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/> |
| Material <input type="checkbox"/>           | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                  |
| Internal Transport <input type="checkbox"/> | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>               |
| Tribal Knowledge <input type="checkbox"/>   | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>             |
| LOA <input type="checkbox"/>                | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>     |
| Substation <input type="checkbox"/>         | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>          |
| Past Expiry Date <input type="checkbox"/>   | Manufacturing Process <input type="checkbox"/> |                                                 |
| Misidentified <input type="checkbox"/>      | Past Due <input type="checkbox"/>              | OTHER : _____                                   |

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Container No: S122320



Part: D4146 - 1

Job No: 184684

Serial No/Batch: S122320

Revision: \_\_\_\_\_

Inspector: \_\_\_\_\_

Exp Date: \_\_\_\_\_

Instructions: Various STC's

Date: 10/29/18